Los Alamos Computer Science Institute

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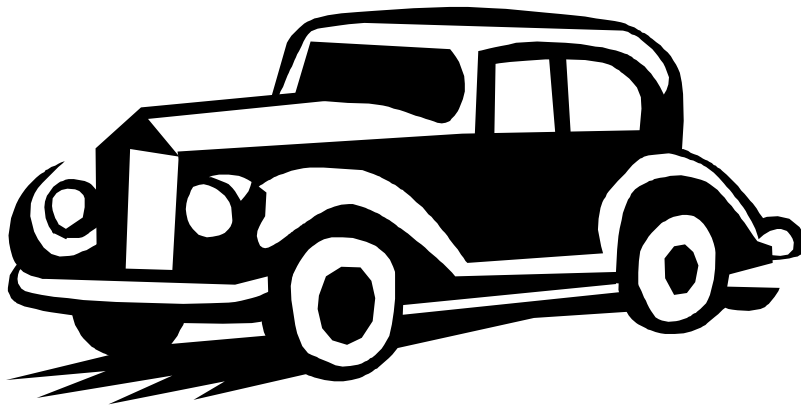
ASCI is a tri-laboratory and Defense Programs collaboration that will create the leading-edge computations modeling and simulation capabilities that are essential for maintaining the safety, reliability, and performance of the US nuclear stockpile and reducing the nuclear danger.

The Problem

- 1980
- Reliability
- Aging
- Loss of expertise
- Complexity
- Whole system modeling

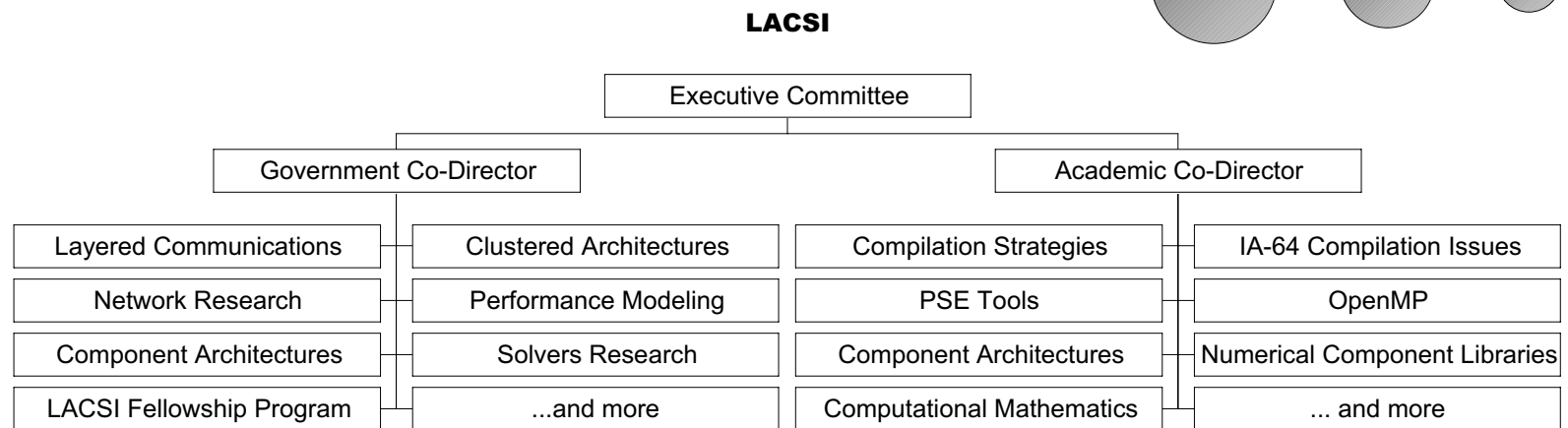# *Extreme Simulation*

- Parallel Algorithms
- Problem Solving Env.
- SQE
- Clusters

- Huge Data
- Visualization
- Reliability, Accessibility, Scalability
- Security

- **Targets 2-5 years out**

LACSI Mission

- Build computer science (CS) strength at Los Alamos National Laboratory

- International CS Center of Excellence

- Pursue long term CS relevant to ASCI

- Encourage HPC in academia

LACSI Structure

LACSI

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                        │   Executive Committee    │
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          ┌──────────────────────────┐      ┌──────────────────────────┐
          │  Government Co-Director   │      │   Academic Co-Director    │
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Layered Communications	Clustered Architectures	Compilation Strategies	IA-64 Compilation Issues
Network Research	Performance Modeling	PSE Tools	OpenMP
Component Architectures	Solvers Research	Component Architectures	Numerical Component Libraries
LACSI Fellowship Program	...and more	Computational Mathematics	... and more

LACSI Participants

Los Alamos National Laboratory

Rice University

University of Houston

University of Illinois, Urbana-Champaign

University of New Mexico

University of Tennessee, Knoxville

Delivery

Applications			
PSE	Views	Platforms	DisCom^2
Research			
CS Institutes	PathForward	University Alliances	